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언론정보학석사학위논문

# Adopting Normification as a Source of Intrinsic Motivation

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# Abstract

Services in various fields apply the concept of gamification as the delivery method of behavioral information for maintaining motivation. However, prior work has discussed that the gamification is not always effective. This paper explores whether this gamification, that stimulates extrinsic motivation through competitive elements, is actually helpful in promoting intrinsic motivation that has been claimed effective in achieving long-term goals. In the preliminary study, a focus group interview was conducted with participants who either have or had used a smartphone application adopting the concept of gamification to achieve their goals. The study found that the concept of gamification does not work in all cases, especially when intrinsic motivation is more important. Based on the related works and the preliminary study, this paper proposed a normification framework that can be used as the delivery method of behavioral information for maintaining intrinsic motivation. The framework consists of four main elements: *Decision*, *Stimulation*, *Action*, and *Reflection*. In order to validate the normification framework in real situation, the “reading everyday” campaign study was conducted. The result of the study shows that the concept of normification was more effective than the concept of

gamification for maintaining intrinsic motivation. Furthermore, the reading behavior pattern of the participants was more consistent in the normification group.

**Keywords:** Normification, Gamification, Intrinsic Motivation,  
Information communication

**Student Number:** 2013–22845

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# 1. Introduction

There have been various attempts to stimulate motivation. For example, a lot of health related services use several approaches to motivate people. Specifically, smartphone applications adopt the concept of gamification in order to motivate people and keep them motivated. But, does the concept work for all kinds of motivation? If not, which other concept can be proposed for maintaining motivation?

Motivation is very important for people to achieve their personal goals. Motivation is classified into two categories: intrinsic and extrinsic motivation. Intrinsic motivation makes an individual act for the fun or challenge entailed rather than external elements such as pressure or rewards (Ryan and Deci, 2002).

It is still debatable whether gamification is effective for maintaining motivation. Even though some researchers argue that gamification can be applied to intrinsic motivation, many other researchers have questioned the validity of the concept of gamification, and argued that gamification doesn't stimulate all kinds of motivation. From a study of volunteer motivation, Iacovides et al. (2013) suggested that game elements help to sustain engagement over

time. However, gamification is reward-oriented, which means that it focuses on motivating people through external rewards instead of intrinsic motivation (Deterding, 2013). Nicholson(2012) predicts that external elements of gamification would reduce motivation in the long term. The study by Preist et al.(2014) applies the concept of normification from Goffman's social stigma and observes whether this could be used as an alternative concept of gamification for encouraging intrinsic motivation. However, the study uses the concept without thoroughly defining it. Therefore, the concept of normification has not been developed enough to be used as a framework for organizing behavior as an alternative to the concept of gamification.

## 2. Related Work

### 2.1. Motivation

According to Elliot and Covington(2011), motivation is articulation and direction of action. It is a state that leads the behavior of objects to the goal. Prior works have identified a wide range of motivation types in theories. Deci and Ryan(1985) distinguished between two types of motivation giving rise to an action – intrinsic and extrinsic motivation – based on different reasons or goals. Intrinsic motivation is associated with feelings of control (Biddle and Mutrie, 2001). It makes people perform behaviors for the pleasure and satisfaction of the process (Deci, 1985). In contrast, extrinsic motivation promotes behaviors with contingent outcomes that are not directly related to the activity itself, such as awards or evaluations.

Many existing studies show that an extrinsic reward and competition have negative effects on maintaining intrinsic motivation. The first argument is that an extrinsic reward, which is not related to an activity, makes people feel like they are losing control over their

own behavior (Deci and Ryan, 2002). The Soma cube study shows that an extrinsic reward decreases intrinsic motivation (Deci and Ryan, 1972). The group, that had previously received an extrinsic reward, spent less time solving the puzzle when they got no reward. On the other hand, the control group, which had constantly gotten no reward, spent the similar amount of time for solving the puzzle. According to the experiment, integrating with personal goals and needs rather than activity of extrinsic control impresses people by showing that they have done positive activity.

Secondly, there is the N-effect, explaining the relationship between competition and intrinsic motivation; increasing the number of competitors can decrease motivation (Garcia and Tor, 2009). On the first study, the researchers found that average SAT(Scholastic Aptitude Test) scores fall as the average number of people taking test at test-taking venues increase. On the second study, individuals trying to finish a quiz in order to be ranked in the top 20% in terms of speed finished significantly faster when they believed the number of their competitors were 10 rather than 100. On the third study, they found that the effect is strong among people who have high

social comparison orientation. In other words, the more people have a strong sense of rivalry, the more demotivated they are.

Moon(2014) argues that stimulation methods are important for providing specific motivation type. According to him, there are two factors for maintaining intrinsic motivation. One is ‘a sense of progress.’ If people do not want to execute or have no interest in a task, they might enjoy the task only when they sense the quality improvement is made or the training duration is shortened. The other one is ‘importance.’ Even though there are tasks people equally do not want to execute, these tasks can encourage intrinsic motivation if tasks are highly important to them. This study distinguishes intrinsic motivation as a type of motivation to reach an individual’s desire to perform the task for its own sake, in opposition to extrinsic motivation, which is a competitive motivation to move ahead of others.

This study distinguishes intrinsic motivation as a type of motivation to reach individual’s desire to perform the task for its own sake, in opposite end of the extrinsic motivation, which is a competitive motivation to move ahead of others.

## 2.2. Gamification

Gamification has been gaining tremendous popularity in configuration of smartphone applications in all fields, and the reason is deeply related to motivation (See figure 1). The concept of gamification started to receive the public attention through the ‘Gamification Summit 2011’ held in San Francisco in 2011. Even though it has a relatively short history, researchers have already conceptualized gamification. Firstly, gamification is “use of game design elements in non-game applications (Grove, 2011).” Witt et al.(2011) also defined gamification as realizing game mechanics and principles, and this suggests the possibility of raising the level of enjoyment and flow.

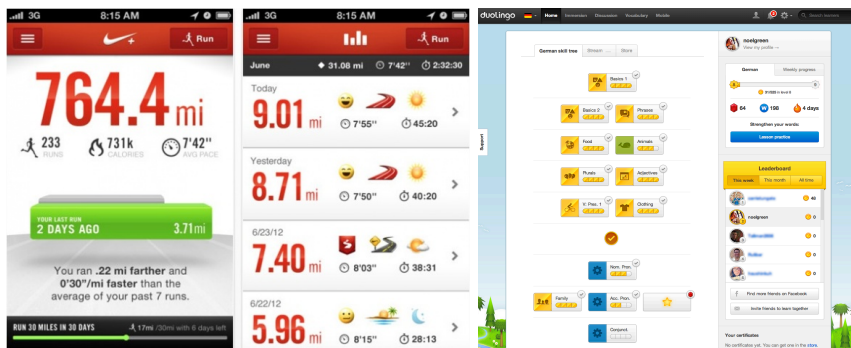


Figure 1. Examples of smartphone applications using gamification elements

Gamification is often used to motivate people, and it is the essence of the direct mechanisms of computer games. Prior studies have identified positive aspects of gamification. Bajdor and Dragolea(2011) suggested that gamification could get the attention of people and their commitment in the long term. Galetta(2012) has argued that the main goal of gamification is to captivate and motivate people to do the routine tasks by using game practice. Kapp(2012) also argued that leading to participate in actions or activities is a key element of gamification, and this kind of motivation gives people new life direction and a process of assigning personal goals or meaning.

As mentioned earlier, competition is a major factor for stimulating motivation in gamification and a couple of prior works have discussed competition in gamification. Banfield(2014) argues that competition with oneself or peers leads to the success of gamification. Burguillo(2010) argues that competition influences participation and learning, and helps to achieve high learning through social pressure. Galetta(2012) argues that competition is a very important factor in gamification; a goal increases productivity and performance, earns and preserves competitive advantages, and therefore is a basis of many applications causing innovation. In addition, he says that

competition is always the basis of game, and people compete for achieving their goals and developing their own leaderships. In practice, the mutual comparison of the result and the emulation motivates continuous improvements (Galletta, 2012).

Gamification uses many elements in order to induce competition. These elements are based on a “reward system” that enables objective comparison among people. The factors are points, badges, and a level system. Those are the material rewards of tasks that individuals do for their goals. As more and more material rewards are obtained, one’s own goal is gradually accomplished. Therefore, those symbolize achieving goals. Points, badges, and the level system are also used as a measure of comparing one’s own performance against others. Therefore, it stimulates participants to accomplish personal goals by increasing motivation to achieve more points and badges than others.

However, there are negative aspects of gamification. The extrinsic rewards which gamification provides cause users to experience negative emotions, and this may demotivate some (Nicholson, 2012). This argument can be supported by Deci and Ryan(1972) and Garcia and Tor(2009) previously mentioned. The studies show that an extrinsic reward and competition, the important factors of



gamification, demotivate people. So, at least for some cases, a different approach might be needed to motivate people.

### 2.3. Normification

Goffman(1963) derives the concept of normification from the discussion of social stigma. He defines the concept of social stigma as spoiled social identity, and focuses on particular properties. Firstly, he emphasizes that stigma is social edifice rather than personal property. According to him, the stigmatized and the normal are divided based on the relationship between the stigma and the individual. In other words, anyone can play both roles, the stigmatized and the normal, depending on social situations. That is, a person in the opposite position of the normal depending on situation is naturally considered the stigmatized. Therefore, whether a person is normal or stigmatized is a matter of process rather than a matter of the actual person. When Goffman explained the concept of normification, he termed normification as the effort of the stigmatized to show oneself as normal.

Even though the concept of normification is not popular in research, some studies explore the concept of normification within

social norms. The social norm is very powerful in determining behavior. The concept of normification can be an alternative to gamification since competition can demotivate people though competitive elements that current systems use (Preist et al., 2014). In order to examine whether the concept of normification can be used for the alternation of engagements instead of competitive strategy, they did the “Close the Door” study, UK-based pro-environmental crowdsourcing study. Through the study, they found that particular participants showed normalizing attitude. In the initial stage, it is the behavior that questions existing behavior in response to challenge the existing norms. But as time goes by, this new behavior may become competitive substitutive option, and finally absolute norm. The term for this process is called normification. Furthermore, the study divides normification into three categories: social comparison, social pressure, and social sanction. Firstly, social comparison is people comparing their actions and opinions with those of others. For example, there is no right answer about opinion of death penalty. When the objective standard is absent like opinion of death penalty, people try to compare their actions and opinions with others in order to synchronize with them. Secondly, social pressure is the combination

of comparison and injunctive norm. “Don’t Mess with Texas ad” can be one example. This is a successful anti-littering campaign. The underlying message of the campaign is ‘real Texans don’t litter.’ When people see the advertisement, they know what positive and negative actions are and what injunctive norm is. Thirdly, social sanction is about people who failed to the norm. The norm-breaker either gets a punishment, or ignored or boycotted by community.

This paper focuses on descriptive norm relevant to a social norm approach as a core concept value of normification. Descriptive norm is based on one’s perception of the behavior typically performed by the majority of people around him. Observations of how people act make this perception, and the perception makes the person do the certain behavior. Grossbard(2009) adopted the concept of descriptive norm and found that both college student and college athlete descriptive drinking norms have an effect on individual alcohol consumption.

From the discussion above, the concept of normification helps people work hard with the individual’s inner criteria toward achieving goals. In addition, people also feel comfortable and satisfaction when they succeed in belonging to the normal. These

encourage people not give up their own goals and results in continuous motivation.

### 3. Research Question

Since the concept of gamification motivates people by suggesting absolute evaluation criteria to compare and compete with others, it could demotivate people who are left behind. However, setting goals means that people already feel they need effort for fulfilling their insufficiency. Therefore the concept of normification, providing relative evaluation criteria in one's inner side, helps people achieve their goals without demotivation.

The concept of normification is occasionally used in order to explain some phenomenon. However, the distinct concept of normification has not yet been developed clearly for use as a framework of organizing behavior for maintaining intrinsic motivation like the conception of gamification does. Therefore, the first research question is introduced below.

*RQ1: What are the elements of normification for designing the normification framework and how are they applied to the framework?*

To answer the research question, a preliminary study was conducted. The study provided a focus group interview in order to see whether gamification is validated for maintaining intrinsic

motivation. Participants either have or had used a smartphone application adopting the concept of gamification in order to get motivated to achieve a goal. Based on the literature review and the focus group interview, the initial normification framework was designed.

*RQ2: Is the normification framework effective for maintaining intrinsic motivation?*

In order to see this, an experiment was conducted to examine whether the initial normification framework can be applied to the actual service design for stimulating intrinsic motivation. The study compared the behavioral data of a group stimulated by the concept of normification and that of a group stimulated by the concept of gamification.

## 4. Preliminary study

In order to understand how people work with motivation stimulating services, a focus group interview was conducted as a preliminary study. Since gamification makes users compete with others by comparing absolutely objective elements such as scores or badges, this interview focused on what people really felt while using services, which applied the concept of gamification for maintaining motivation. Therefore, the participants who were familiar with smartphone applications adopting the concept of gamification were interviewed. Through the interview, the researcher also investigated if the concept of normification could truly work for maintaining intrinsic motivation. Each interview took about forty-five minutes. After the interviews, the responses were coded and re-categorized for analysis.

### 4.1. Participants

There are eight participants aged 20–29 who are using smartphones and social networking. These participants were divided into two groups: group A who were currently using smartphone

Table 1. The focus interview group

	The group currently using smartphone applications adopting the concept of gamification (1)	The group that had used smartphone applications adopting the concept of gamification (2)
Over one year (A)	Two (A1-1, A1-2)	Two (B1-1, B1-2)
Less than one year (B)	Two (A2-1, A2-2)	Two (B2-1, B2-2)

applications adopting the concept of gamification, and group B who had previously used smartphone applications adopting the concept of gamification. Each group is divided into two subgroups again based on usage period: long-term use, which refers to more than one year of use, and short-term use, which refers to less than one year of use (See table 1). Each participant used different smartphone applications, but all of them had the common experience of using the applications as a motivational tool for achieving goals.

## 4.2. Interview

### 4.2.1. Competition

Group B2 thought positively about the effort to outdistance others through competition. In contrast, Group A1 responded that they



would rather make effort based on their own values, though competition with others could increase the efficiency.

*“After all, I determine how much effort to put based on whether I get closer to meeting the goal rather than whether I am better than others because the competition quantifies me by comparing me against the others.” – A1-2*

It shows that the function of competition, which gamification pursues, is not effective for everyone to maintain motivation. It is also supported by the emotional responses of the participants, which result from tasks applications require.

All groups except Group A2 did not feel that goals have been achieved through their own efforts while doing the required tasks on the applications.

*“It only gives me feedback on my progress”– B1-1*

Based on the responses above, gamification is effective in stimulating motivation for less than one year of use, but not much effective for more than one year of use.

#### 4.2.2. People around them

One of the differences between the group currently using smartphone applications adopting the concept of gamification and the group previously having used the applications is awareness about people around them. Participants in Group A1 regarded people around them as colleagues with the same goals though they are familiar with the competitive environment. Therefore, they could manage their stress in the competitive situation.

*“I regard they are someone whom I can get some advice from and share pros and cons with.” – A1-1*

*“I feel a sense of solidarity because we have the same goal”*  
– A1-2

In contrast, the participants in Group B1 often felt people around them with the same goals as rivals.

*“I regard them as colleagues when I am confident that I can control them. But I regard them as rivals when I am not.” – B1-1*

*“I usually regard them as colleagues, but they are rivals in competitive situation.” – B1-2*

In summary, there are some characteristics of the people on whom gamification worked effectively: people who were familiar with the competitive situation, were not sensitive to stress, and had awareness of people around them as colleagues rather than competitors. On the other hand, the participants who considered people around them competitors used smartphone applications with competitive elements of gamification for a certain period of time and did not use them consistently because they wanted to avoid competitive situation.

Even though the participants had different perspectives about people who were ahead and behind, gamification elements clearly gave the participants quantified differences against others, such as ranking and badges. However the elements did not reflect this awareness. Only the participants in Group B2 felt satisfied when they found out that they beat people who were doing better than them.

Furthermore, only the participants in Group A2 were worried if it affected them when they found out that people, who originally had fewer badges and lower ranking, beat them. Comparably, the participants in Group A1 and B1 did not worry about the same issue.

*“I rationalize myself.” – B1-1*

*“I think that it is a temporary situation.” – A1-1*

*“I think they tried hard.” – B1-2*

Originally the purpose of the badges, rankings, and scores that gamification provides is to stimulate motivation through a quantificational comparison with people around them. But, the effect is not large. Furthermore, the effect is reduced as the use of smartphone applications related to gamification increases.

### 4.2.3. Method

Except one participant in Group A1, all participants set short-term goals and achieved them step by step as a strategy for stimulating motivation. The reason they use this process is because they want to get continuous feedback about their progress and to modify their plans if needed. Except one participant in Group B1, all participants prefer the representation scheme that compares one's past and present. This can be also considered as the strategy of goal achievement.

*“I want to know my progress since I set the goal and have done related tasks to achieve the goal.” – B1-1*

*“It helps me determine how much I focus on the goal.” – A2-2*

Only the participants in Group A2 think that elements of the smartphone application related to gamification point out the individual's weak points.

Even though the strategy for stimulating motivation to achieve a goal seems similar to the strategy of gamification, people did not feel they are similar. The strategy of gamification was not enough to give confidence to people as it did not provide feedback on whether the individual had gradually achieved his goal and they were on the right track.

#### 4.2.4. Reward

All participants thought that a reward is effective to maintain motivation. They also believe that it is reasonable to get a reward for what they accomplished. But the concept of reward is different for each individual. The participants say that monetary rewards, emotional bonds, high self-esteem, recognition and reputation of others, and continuous progress for goal achievement are rewards of effort for the goal. Those various thoughts about reward do not show differences between the groups. However, the participants commonly

expect intangible rewards rather than material rewards as a result of achieving a goal. This also corresponds to all participants except one who thinks satisfaction is more important than winning in the competition as a reward. More than half of those participants say that as long as they can be in the majority among people in their group, self-satisfaction is more important.

It is found that material rewards of gamification such as badges, scores, and rankings also reflect the recognition of reward mentioned above. The participants in Group A1 and A2, having used the smartphone application adopting the concept of gamification, are aware of material reward of gamification such as points and levels. The participants in Group A2 and B2, having used smartphone applications adopting the concept of gamification less than one year, felt satisfaction when they earned points, levels, or badges. However, the participants in Group A1 and B1 thought that a material reward was a measure of feedback on their progress rather than just reward.

*“It is like a to-do list which I keep on checking.” – A1-2*

*“It makes the goal quantifiable. Through the numerical value, I can easily see that I reach the goal little by little. Every time I see that, I get highly motivated.” – B1-2*

The material reward that gamification provided helped people maintain their motivation to some degree. However, as the period of the application use got longer, the reward system functioned as a feedback system. The satisfaction from feedback was a reward. Also, self-evaluation and satisfaction with the progress were more important elements than satisfaction through competition or comparison with others for maintaining motivation.

#### 4.2.5. Self-Display

Except the participants in Group A1, participants did not do any tasks only for getting a reward or showing off. However, even the participants in Group A1 said that they only had little experience of showing off, but considered it an unimportant issue. Except one participant in Group B1, all participants had not shared their performances through social networking if it was not mandatory.

In this sense, it can be seen that showing off the process of goal achievement to others does not stimulate motivation. Even though

hundreds of smartphone applications adopting the concept of gamification provided many options to share, all participants were sure that they would not use the applications if those put all records of activities on social networks.

### 4.3. Implication of preliminary study

Even though gamification has been used for improving motivation in many fields, the preliminary study shows that it does not work in all cases. There were people who were unsuitable for gamification provided for stimulating motivation. However, they had their own methods to stimulate motivation in order to achieve the goal. Those people had some common characteristics. First, they had long-term goals. People using smartphone applications adopting the concept of gamification more than a year are more skeptical about extrinsic motivation. Second, they recognized people around them as rivals to compete against, and felt uncomfortable about that. In this case, smartphone applications stimulating competition were not consistently used. Third, they disliked sharing the process of goal achievement with others.



Then, how did they motivate themselves in order to achieve the goal? First, they made efforts to reach inner criteria rather than external criteria. They also used extrinsic rewards (i.e. points, rankings) as feedback rather than the element to determine individual state by competition and comparison with others. Therefore, they preferred to compare their own past status with their present status rather than to compare with others as an information representation method. Second, the participants made noticeable efforts not to deviate far from the group's mode, where they could feel a sense of stability. This was due to the fact that they thought goal achievement was based on minimum evaluation criterion. After they reached the mode of the group related to their goals, self-satisfaction would be the next factor they considered in order to judge their level of achievement.

From the interview, it is found that there are people who are not suitable for the extrinsic stimulation, such as competition and rewards, that gamification provides. However, those people work hard to satisfy their intrinsic motivation. Most of them have long-term goals and feel uncomfortable in competitive environments. They also want to maintain motivation for achieving goals by continuous

feedback on their progress rather than comparison with others. They put in effort to stay as the mode of a group where they can feel a sense of stability, in relation to the goals of the individual. This shows that an individual put in effort for meeting his personal minimum standard of the normal because he wants to comfort himself by the fact that he is the normal, not the stigmatized. As a result, this corresponds to the concept of normification, Goffman termed the effort of the stigmatized as one who wants to show himself as the normal.

## 5. Definition of normification

Based on how prior work defined elements related to the concept of normification and intrinsic motivation, the main elements of normification, representing a process to achieving a goal in chronological order, were found: *Decision*, *Stimulation*, *Action*, and *Reflection*. In order to design sub elements of each main element, focus interview analysis were also conducted.

*Decision* is an initial set up in order to establish a standard of behavior regarding intrinsic motivation. The interview results have demonstrated a tendency to use the concept of normification in achieving long-term goals. The interviewees answered to have set a certain goal first and do certain behavior in order to achieve that goal. Each person is in a certain group of those who share the same goal, and this situational group is not always the same as a group he wants to be in. However, as Goffman(1963) highlighted in his definition of the term ‘normification’ – an effort of the stigmatized to be seem as the normal – both groups are important in order to maintain intrinsic motivation. In other words, people try hard to do certain behavior in order to be accepted as a member of the group.

*Stimulation* leads to a certain behavior regarding intrinsic motivation. The interviewees are aware of others with the same goal surrounding them, and observe what others do. From the interview the participants have exhibited a sense of belonging to the group. Prior work also indicated that descriptive norm is based on one's perception of the behavior typically performed by the majority of people. Observations of one's surroundings build this perception, which leads to a certain behavior. As being in the majority is important, this motivation leads people to do the behavior that leads to the goal (Elliot and Covington, 2011), and the behavior becomes an 'importance' task (Moon, 2014).

*Action* is what can be earned from performing a certain behavior. The interviewees demonstrated the desire for specific reward types for goal achievement. Even though they use smartphone applications adopting the concept of gamification, they use scores and badges as feedback on their progress towards personal goals. This corresponds to Moon's argument in the related work. Moon(2014) argues that when people get 'a sense of progress,' the joy of improved quality and shortened training duration changes extrinsic motivation into intrinsic motivation. The interviews show that they prefer mental

rewards to material rewards. The interviewees think that satisfaction on progress towards achieving a goal is the most precious reward they can get. This also corresponds to Deci and Ryan's argument aforementioned. According to Deci and Ryan(2002), the activity should be fully integrated with intrinsic rewards rather than extrinsic rewards in order to impress people who have done positive activity.

*Reflection* is the process of evaluation on behavioral history. People have relative evaluation criterion in their inner side to determine goal achievement. The interviewees made noticeable efforts not to deviate far from the group's majority, where they could feel a sense of stability. This corresponds to the term of normification Goffman(1963) defined.

Based on these elements, the initial normification framework was designed (See table 2). This framework could be applied for organizing behavior for maintaining intrinsic motivation.

Table 2. The elements of the normification framework

Decision	Goal	Goals that one ultimately wants to achieve by continuing the behavior associated with intrinsic motivation	
	Period	Duration that one wants to keep the certain behavior in order to achieve the goal	
	Group	Situational: the group sharing the same goal Demographic: the group one wants to be in	
Stimulation	Relationship between the group and me	Belonging	
	Observation	Behaviors of the group members	
Action	Behavior	Recording one's behavior	
	Feedback	Alarm (below the mode of the group)	
	Reward	Emotional satisfaction	
Reflection	Evaluation	Individual	Individual Change
		Goal	How close to the goal
		Group	The difference between activities of the mode of the group and one (relatively)

## 6. Experiment

### 6.1. Purpose

The purpose of this study is to evaluate the validity of the normification framework in a real situation. Therefore, the study examined whether the normification framework works effectively for organizing behavior for maintaining intrinsic motivation. In order to examine it, the effectiveness of normification framework for maintaining intrinsic motivation was compared with gamification.

A “reading everyday” campaign was brought to the study. There are some reasons for this. First, the goal of “reading everyday” comes from intrinsic motivation. Since one sets the goal with a desire to perform the task for one’s own sake, this subject can be used as intrinsic motivation. Intrinsic reading motivation can be defined as one’s enjoyment of reading activities performed for one’s own sake (Deci, 1992). Second, one can engage in the activity of ‘reading’ without the constraints of time and place as long as one has the motivation. (Morrow, 1996). In other words, one may read books everyday without much difficulty. Therefore, with the intrinsic motivation subject of “reading everyday,” this study examined if the

normification framework is more suitable for organizing behavior for maintaining intrinsic motivation than the gamification framework. The study used the definitions related to reading behavior that the Korea National Statistical Office(2013) used for the national reading time survey. First, ‘reading time’ is the amount of reading time including both paper books and electronic books. A ‘paper book’ is the general form of printed books except for textbooks, reference books for learning, magazines, and comics. An ‘electronic book’ refers to the various digital books readable on computers, smartphones, smartpads (tablet PCs), or e-book devices except for textbooks, reference books for learning, magazines, and comics.

In order to examine this, the reading campaign website was designed using Ruby on Rails for the study. It was designed as a mobile-savvy web application for ease of use on smartphones. The website contains two different types of motivation stimulation – normification and gamification. The normification mode was designed based on the normification framework the researcher developed, while the gamification mode was designed based on the gamification framework which is using widely in many current applications (See table 3). People who had a goal of “reading books



everyday” could freely register on the website and join the campaign. Then the participants were asked to do reading task and record their reading time. After submitting the reading time, they were able to see reading progress towards the goal. When registered, the participants were randomly divided into two groups: normification and gamification group. The participants in the normification group got information about where they belong on the distribution of the group and how deviant they are from the mode of the group. The participants in the gamification group got information about how far they were from people in the top of the group with a ranking and badge system. In this experiment, two hypotheses are introduced below.

*H1: The number of people in the normification group who keeps doing daily reading over time is higher comparing to the number of people in the gamification group.*

*H2: The amount of reading time of the normification group will remain more consistent over time compared to those of the gamification group.*

Table 3. The components of the website

		Normification	Gamification
Decision	Goal	Goals that one ultimately wants to achieve by continuing the behavior associated with intrinsic motivation	
	Period	Duration that one wants to keep the certain behavior in order to achieve the goal	
	Group	Situational: the group sharing the same goal Demographic: the group one wants to be in	
Stimulation	Relationship between the group and me	Belonging	Competition
	Observation	Behaviors of the group members: The mode behavior of the group (group mean time or numbers)	Behaviors of the group members: Today's top rank information of the group
Action	Behavior	Record one's behavior: After doing task, record the time and/or frequency of the behavior	
	Feedback	Alarm (below the mode): The lack of time in order to reach the mode of the group	Alarm (one's ranking is dropped): The values of the immediately above and below of one's ranking
	Reward	Emotional satisfaction: Getting a message saying one belongs to the mode of the group	Extrinsic reward: Getting a badge when one is on the top rank (1 <sup>st</sup> to 3 <sup>rd</sup> )

Reflection	Evaluation	Individual	Individual Change: How one's activity has progressed as time passes	
		Goal	How close to the goal: Comparison of the sum of the activities and the final goal	
		Group	The difference between activities of the mode of the group and one (relatively): How often one's activity reaches the mode of the group (or more)	Comparison of one's activity and the whole group activity (quantitative): How one's rankings change as time passes

## 6.2. Participants

66 participants (37 females, 29 males) were recruited through Facebook and online book clubs. Before signing up for the study, they were asked to complete a survey for demographic information including age range, gender, and average daily reading time. 33 participants (50%) were aged 20–29, and 21 participants (32%)

Table 4. The distribution of the average reading time per day

Average reading time per day	1–9 minutes	10–19 minutes	20–29 minutes	30–59 minutes	60–119 minutes	Over 120 minutes
Number of the participants	9	14	20	10	6	7

were aged 30–39. 43 participants (65%) spent less than 30 minutes reading books per day (See table 4).

The participants did not get a monetary reward since avoiding any extrinsic factor is important as this study was designed to measure intrinsic motivation. The only thing that the participants were asked to do was recording the amount of reading time on the assigned website every time they finished reading, but it was not a compelling rule.

The participants were randomly divided into two groups, normification group and gamification group. The participants in each group were only able to see the pages that were designed for each group. Every time the participants logged onto the website, they could see records of their own reading and that of other people in their group.

### 6.3. Procedure

Since information about what other people do in “my group” is an important factor for influencing one’s behavior, it is controlled and not unveiled to the participants during the study. So, the participants in both groups get the same behavioral information about the reading

time of the group. Reading time behavior of the group is simulated in advance based on the national reading time survey provided by the Korea National Statistical Office(2013). Since most participants in this experiment are between 20 and 40 years old, the distribution ratio of 200 virtual group members' reading time was designed based the reading time distribution of people of the same age. In order to make it seem natural, the distribution ratio of the group reading time for each day was set randomly within a 5 minutes range from the initial distribution of the group reading time at midnight of that day. The random amount of group reading time is updated every 3 hours to get closer to the amount of group reading time set for that day.

The websites did not include a social feature such as sharing one's activities with others through social networking service because the study focuses on an information delivery method that could maintain intrinsic motivation. The only difference between the two groups is the method of delivering the information to the participants.

The websites for both gamification and normification group consist of three main menus. Even though the menu structure looks the same, the method of information delivery for the participant's own behavior and group behavior is different.



Figure 2. The website for normification (left) and gamification (right)

First, there is a daily menu page (See figure 2). This page is also the first page that participants encounter when they log in on the website. On this page, the participants can record the amount of their reading time on every reading behavior. As soon as they record the amount of reading time by typing the number and clicking the send button, the record is listed up on the bottom of the page. When the participant records the amount of reading time multiple times on one

day, the record is stacked and listed in chronological order. At the same time, the total reading time of that day is automatically summed up and displayed.

On the page for the normification group, the participants can see qualitative comparison of the participant's own behavior and that of the mode of the group. The visualization shows where the mode of the group and the participant are positioned in the total reading time distribution of the group. The summary section displays that the participant's own total reading time and total reading time of the mode of the group in text format. When the amount of the participant's own reading time is lower than that of the mode of the group, the text message displays saying that how much more time the participant has to spend reading in order to be the mode of the group. When the participant reaches the mode of the group, the text message displays saying that he belongs to the group of mode or higher. This gives a minimum sense of stability that the participant belongs in the acceptable range as a group member.

On the page for gamification group, the ranking system is applied and displayed as a bar chart. The bar chart showed the amount of the participant's reading time, a group member's reading time right

under the participant's rank, a group member's reading time right above the participant's rank, and top three members' reading time in the group. The bar chart is displayed vertically and sorted by rank order. Each rank is shown on the left side of the chart and the each amount of reading time is shown on the right side of the chart. In order to display the participant's own rank and 1<sup>st</sup> rank easily, the color for the bar of the participant's own rank is yellow, and the color for the bar of the 1<sup>st</sup> rank is green. Under the bar chart, the participant's current rank is written on summary section. The extrinsic reward system is also applied on this page. Based on the participant's record from the previous day, he receives a badge if he makes it into top 3. This enables the quantitative comparison between the participant and the members of group, thereby encouraging the participant's competitive spirit to get out ahead of the others in the group at the same time.

Second, there is a weekly menu page (See figure 3). The participant can check the individual progress of the reading time behavior for a week page and evaluate his state in the group.



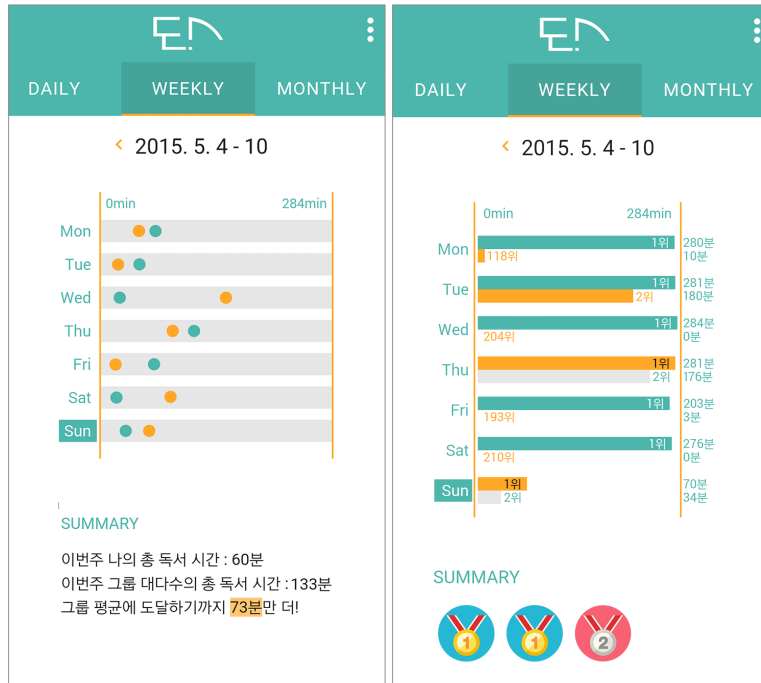


Figure 3. The weekly menu pages for normification (left) and gamification (Right)

The page designed for normification group visualizes the positions of the majority and the participant in the entire group distribution for each day of the week. The visualization method is the same as the one shown on the daily menu page. Under the visualization section, the summary section is followed. The summary section displays the total reading time of the participant and the mode of the group in text format. It also notifies the participants whether the participant belongs to the mode of the group or not. If he is below to the mode of the group, it tells how much more time he needs to read a book in

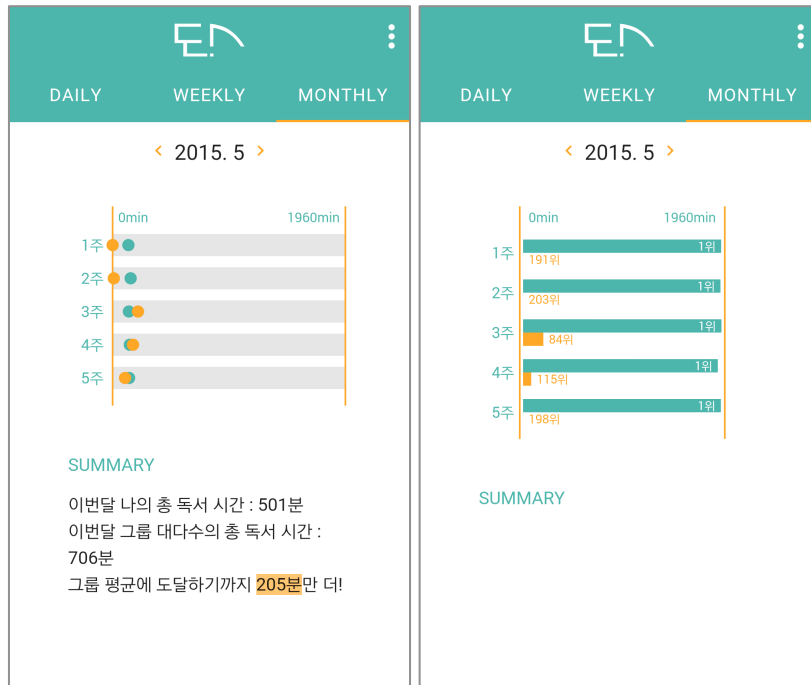


Figure 4. The monthly menu pages for normification (left) and gamification (right)

order to reach the mode much more time he needs to read a book in order to reach the mode of the group.

On the page designed for gamification group, the participants can see the amount of participant's own reading time. The bar chart showed the amount of the participant's reading time and 1<sup>st</sup> rank reading time in the group. The bar chart is displayed vertically and sorted by rank order. On the summary section, badges the participant receives are displayed.

The third menu is a monthly menu page (See figure 4). This consists of the same section as the weekly menu page. The only difference is that the weekly record of the month is displayed instead of the daily record of the week.

The criteria of how well intrinsic motivation is maintained toward the goal are the amount of daily time spent reading and persistence of daily reading. Therefore time participants spend reading on the apps is recorded every time they read books. There are no other rules regarding the website usages.

## 6.4. Analysis

Data analysis was done in four parts. First the number of the participants who did reading in a day was analyzed. Even though 33 participants in each group are assigned to the website, only 19 participants (54%) in the normification group and 24 participants (72%) in the gamification group recorded their reading behaviors on the website. This shows that the concept of gamification gets more attention from the participants at first, but not all of them kept recording their reading time. When the data on a daily basis was analyzed, the mean number of participants in the normification group

Table 5. t-test for the number of the participants on a day

The number of participants on a day	Normification group		Gamification group		t	p-value
	m	sd	m	sd		
	7.70	3.834	3.067	4.741	4.162	< .001

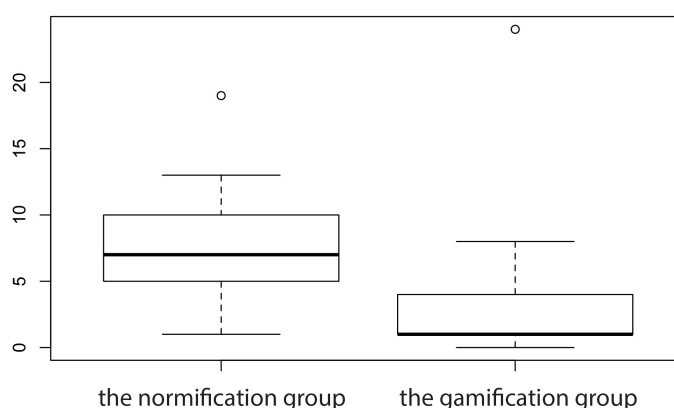


Figure 5. Boxplot of t-test result for the number of the participants on a daily basis

is 7.70, while that of the gamification group is 3.067 ( $t(58)=4.162$ ,  $p<0.001$ ) (See table 5 & Figure 5). The result shows that the normification group more consistently maintains reading behavior compared to the gamification group. The change of the number of the participants in each group in days also shows that the normification group consistently maintains a reading behavior compared to the gamification group(See figure 6).

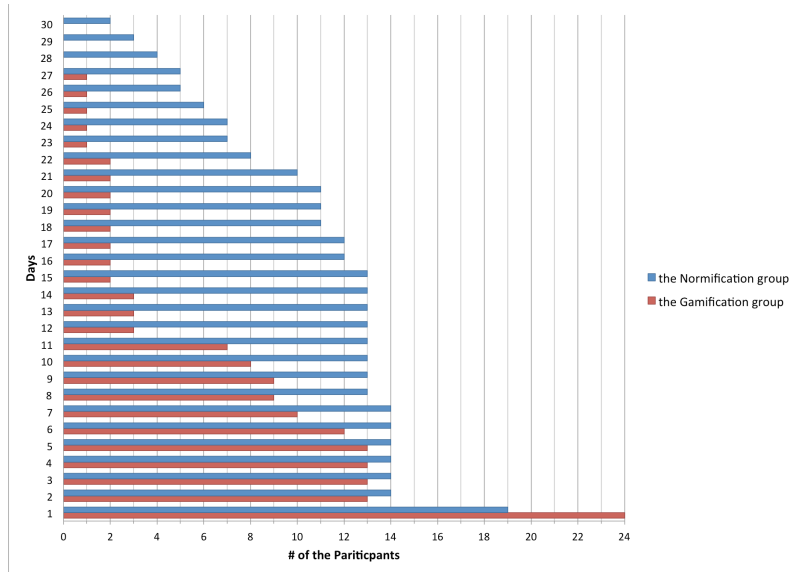


Figure 6. The number of the participants who did reading on each day

Second, the number of actual reading days per participant in each group was compared. The number of the actual reading days of the normification group is higher (mean=12.05,  $SD=8.96$ ) than the gamification group (mean=3.65,  $SD=3.87$ ) and the result of the mean comparison is statistically significant ( $t(41)=4.153$ ,  $p<0.001$ ) (See table 6 & figure 7). The result clearly shows that participants in the normification group kept reading more consistently. As a result, the

Table 6. t-test result for the actual reading days to total period

	Normification group		Gamification group		t	p-value
	m	sd	m	sd		
Actual reading days	12.053	8.966	3.625	3.865	4.153	< .001

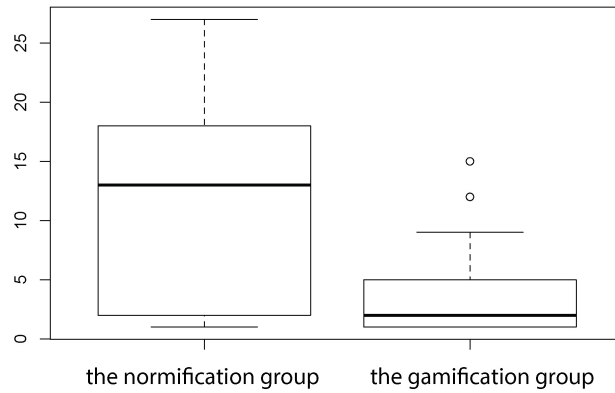


Figure 7. Boxplot of t-test result for the actual reading days to total period

first hypothesis is supported.

Third, the mean of daily reading time of each group was analyzed. Even though the mean is a little bit higher in the gamification group, the result is not statistically significant ( $t(58)=-0.796$ ,  $p=N.S.$ ) (See table 7). That is mostly because the deviation in the gamification group. As Figure 8 depicts, the reading behavior of the participants in gamification group was not consistent while the normification group shows a consistent pattern.

Table 7. t-test result for the mean of reading time on a day

	Normification group		Gamification group		t	p-value
	m	sd	m	sd		
The mean of reading time	32.766	15.743	39.133	40.871	-0.796	N.S.

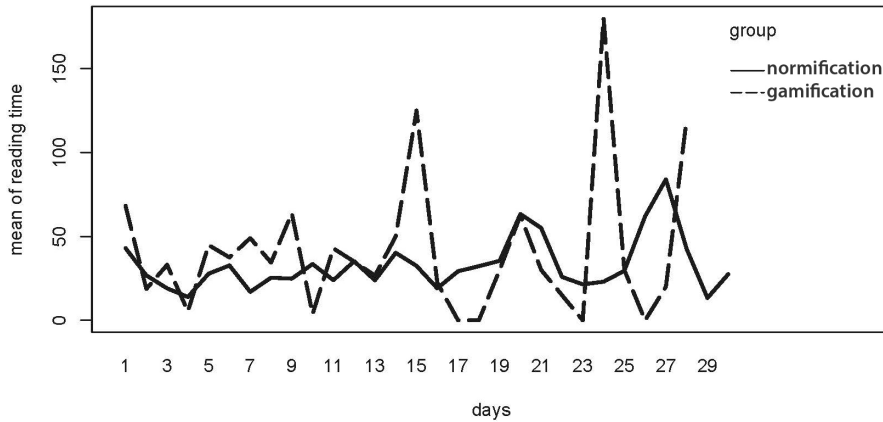


Figure 8. The mean of reading time by days

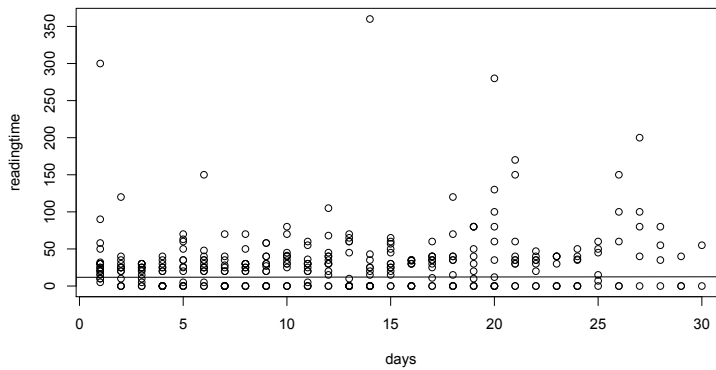


Figure 9. Regression of the normification Group

As previous results show that the normification group presents a consistent yet increasing reading behavior pattern, the reading time behavior change of the groups over the period of 30 days was analyzed. As Table 8 and Figure 9 shows, the reading time of the normification group is slightly increasing and the result is statistically significant. However, the same analysis of the gamification group is

Table 8. Coefficient results for regression of reading time on days

Days	Normification group				Gamification group			
	Estimate	Error	t	p-value	Estimate	Error	t	p-value
	0.631	0.294	2.144	<.05	-0.001	0.007	-0.145	N.S.

decreasing slightly, but the result is not statistically significant. As a result, the second hypothesis is also supported.



## 7. Discussion

The evaluation study results show that the normification framework was more effective than the gamification framework in maintaining intrinsic motivation. First, the participants in the normification group show more consistent reading behavior compared to the gamification group. The actual reading days during the study was also higher in the normification group. Second, the reading time of the normification group was increased even though the result is marginal. In the gamification group, participants reading behavior was not improved and not maintained.

Even with these promising results, the study has limitations. First, since the study was conducted for one month, a relatively short period of time for a longitudinal study, the results are not supported by the large amount of data. However, the limit of the experiment was that it was conducted for one month, which is relatively short period of time. The results are not supported by the large amount of data, but still the current data result demonstrates that the concept of normification maintains intrinsic motivation consistently comparing to the concept of gamification. Since the larger number of samples

and long-term observation are expected to show tendencies of the concept of normification and the concept of gamification, long-term behavioral pattern would be observed with the larger number of samples in future study. Second, the study was not able to apply the concept to diverse domains. The experiment in the study was focused only on the behavior of "reading a book everyday." The reason the behavior of reading was chosen for the experiment because it is related to intrinsic motivation since it can be defined as one's enjoyment of reading activities performed for one's own sake (Deci, 1992) and it can be pursued during one's free time (Morrow, 1996). But, it might be difficult to guarantee that the same motivational approach gives the same effect to all different kinds of topics in different fields. Therefore, the future study may narrow the focus and see which concept is effective to maintain motivation in that specific field. The third limitation is the absence of a social feature. The social feature, sharing one's activities with others through social network service, was controlled in the experiment because the experiment only focuses on information delivery method that maintains intrinsic motivation. The social feature can affect the experiment result depending on one's personality, propensity to manage social network

service, and the number of social network service friends. By controlling the social feature, the experiment only focused on which information delivery method is more effective to maintain intrinsic motivation. Since this study only focuses on information delivery method, the future study may focus on how the social feature effects maintaining intrinsic motivation.

## 8. Conclusion

This study explores the possibility that the concept of normification would be an effective alternative to the goal that requires intrinsic motivation, which the concept of gamification cannot stimulate in all situations.

On the preliminary study, the focus group interview was done with participants who either have or had used the smartphone application adopting the concept of gamification to achieve their goals. The interview found that the concept of gamification does not work in all cases.

For the people who were not motivated by the concept of gamification, there were some common characteristics. First, they have the long-term goal. Second, they recognize people around them as rivals to compete against, and feel uncomfortable about it. Third, they have resistance to share the process of goal achievement with others. However, they motivate themselves in order to achieve their goals. First, they make efforts to fulfill inner criteria rather than external criteria. Second, they put efforts to become or remain as the mode of a group, where they can feel a sense of stability, in relation

to the goals of the individual. This means that each individual has the subjective criteria. Self-evaluation and satisfaction with their progress in achieving their goals are more important elements to them than satisfaction through competition or comparison with others for maintaining motivation.

From the review of prior work and the analysis of focus group interview, this study proposed the normification framework. The framework is categorized into four parts: *Decision*, *Stimulation*, *Action*, and *Reflection*. The study operationalized each term as the following. *Decision* is an initial set up in order to establish a standard of behavior regarding intrinsic motivation. *Stimulation* leads to a certain behavior regarding intrinsic motivation. *Action* is what can be earned from performing a certain behavior. *Reflection* is the process of evaluation on behavioral history.

Then a study was conducted in order to evaluate the validity of the normification framework developed in a real situation. In this study, a “reading everyday” campaign was brought and designed a mobile website. 66 people participated the study and recorded their everyday reading behavior.

The study results show that the concept of gamification gets more attention at first, but people show more consistent reading behavior with the normification. The actual reading days during the study was also higher in the normification group. The deviation of the daily reading time of the normification group was lower than that of the gamification group. Also, the participants in the normification group kept doing daily reading for longer period of time compared to the participants in the gamification group. Those results show that the normification framework is more effective in maintaining the behavior involving intrinsic motivation than the gamification.

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## Appendix

Day	The number of the participants in the normification group	The number of the participants in the gamification group
1	19	24
2	14	13
3	14	13
4	14	13
5	14	13
6	14	12
7	14	10
8	13	9
9	13	9
10	13	8
11	13	7
12	13	3
13	13	3
14	13	3
15	13	2
16	12	2
17	12	2
18	11	2
19	11	2
20	11	2
21	10	2
22	8	2
23	7	1
24	7	1
25	6	1
26	5	1
27	5	1
28	4	0
29	3	0
30	2	0

## 내적동기 유지를 위한 노미피케이션 프레임워크 제안

장예나  
서울대학교  
사회과학대학원  
언론정보학과

목표를 성취해내는 데 있어 동기는 매우 중요한 요소이며, 이는 크게 내적 동기와 외적 동기로 나뉜다. 오늘날 다양한 분야의 서비스들은 개인의 동기를 유지하고 목표를 달성할 수 있도록 돕고자 하고 있다. 이를 위해 목표 성취를 위해 지속적으로 실천하고자 설정한 행위와 관련하여 자신의 행동과 자신이 속한 그룹의 행동 정보를 전달하고 있으며, 특히 게이미피케이션(Gamification) 개념을 적용한 정보 커뮤니케이션 방식이 여러 서비스에 적용되어 사용되고 있다. 본 연구는 자신 스스로 목표를 달성하도록 유도하는 내적 동기를 장기간 유지하는 데에 있어서도 경쟁적 요소를 통해 외적 동기를 자극하는 게이미피케이션이 효과적일지에 대해 의문을 제기하고자 하였다.

이에 본 연구는 자신의 동기 유지를 위해 게이미피케이션 개념이 적용된 스마트폰 애플리케이션 서비스를 사용해본 경험이 있는 사람들을 대상으로 포커스 인터뷰를 진행하였으며, 인터뷰 결과 동기 유지 방법으로써 게이미피케이션이 모두에게 효과적으로 적용되는 것은 아니라는 사실을 발견하였다.

포커스 인터뷰와 문헌연구를 바탕으로 노미피케이션(Normification) 프레임워크를 디자인하였다. 노미피케이션 프레임워크는 결정(Decision), 자극(Stimulation), 실천(Action), 반영(Reflection)이라는 4가지 요소로 구성된다.

실제 환경에서 내적 동기 유지에 대한 노미피케이션 프레임워크의 유효성을 보고자 “매일 독서하기” 캠페인 실험을 진행하였다. 한 달 이상 매일 독서하고자 하는 동기가 있는 실험참여자들을 모집한 후, 이들을 랜덤하게 노미피케이션 그룹과 게이미피케이션 그룹으로 나누었다. 실험참여자들은 자신이 속한 그룹의 프레임워크가 적용된 독서행위 기록 웹사이트를 제공받았다. 실험참여자들은 독서행위를 할 때마다 자신의 독서시간을 제공받은 웹사이트에 기록하였으며, 웹사이트를 통해 자신의 독서 시간 기록과 자신이 속한 그룹의 독서 시간 기록 정보를 자신이 속한 그룹의 프레임워크를 적용한 방식으로 제공받았다. 한 달간 실험을 진행한 결과, 게이미피케이션 보다 노미피케이션 개념이

적용된 정보제공방식이 내적 동기와 관련된 행동을 지속시키고 일정한 행동 패턴을 유지하는 데에 효과적이었다.

주요어: 노미피케이션, 게이미피케이션, 내적동기, 정보 커뮤니케이션

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